

SIEMENS

MODULARIS LITHO Vario

SP

Planning Guide

System

MODULARIS LITHO Vario

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English

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Chapter	Page	Revision
all	all	01
all	all	02
all	all	03
all	all	04

Document revision level

The document corresponds to the version/revision level effective at the time of system delivery.

Revisions to hardcopy documentation are not automatically distributed.

Please contact your local Siemens office to order current revision levels.

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General Notes

- With distribution of these revision level, all preceding planning guides, Speed Infos (PGs) and drafts lose their validity.
- All layouts issued by the Planning Departments must bear a note referring to the installation and delivery conditions of Siemens Medical Engineering. The installation and delivery conditions must be submitted with the layouts.
- Unless otherwise specified, all dimensions are indicated in "mm".



- The symbol indicates a change (see revision status).



- Orientation points
Points specific to system components to which reference is made when positioning system components to each other or in the room.
The isocenter of a radiographic system is always illustrated as the orientation point.

- Fixpoints
Clearly marked points on system components, installation ceiling, walls or floor on which cable outlets are located.
Illustration in the drawings: octagon with letter/number-combination.
The cable lengths specify the maximum fixpoint distances and thus the maximum distances between the individual system components.

- Room height
The room height is the distance measured from the top surface of the floor to the bottom surface of the ceiling structural elements (Unistrut rails) (bottom surface of drop ceiling).

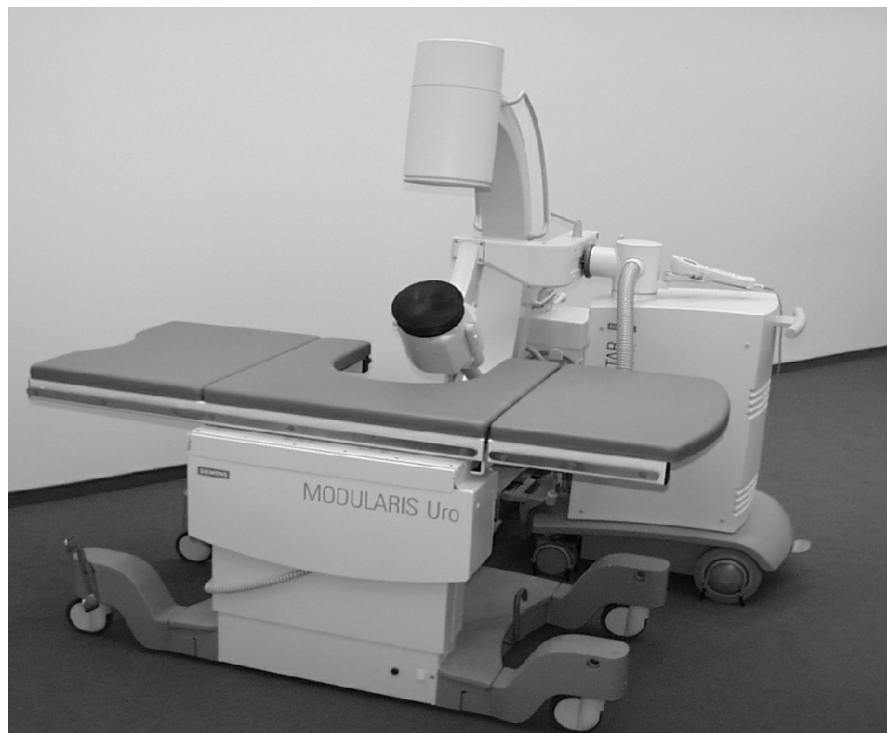
- Room lighting
According to DIN 68 68-57 (international standard in preparation), the lighting in rooms in which image playback devices (monitors) are used for diagnosis, the following requirements must be met:
adjustable, no anti-glare screen, reproducible adjustment of the lighting (e.g. dimmer with scale),
no glare or reflection from windows, lights and light boxes in the standard working position of the monitors.

Hotline + 49 (9191) 18 - 8080

Safety

- The provisions of the relevant fire safety regulations must be observed for the premises.
- The system has been developed according to EN 60601 - 1.
- Minimum dimensions (e.g. room heights, safety distances) indicated in the planning guides are marked "min."
- Basic strength against electromagnetic sources of interference.
Result of lightning discharges.
The protection targets of the different lightning protection areas up to the unit connection are also specified in the IEC 1024, DIN 48810, VDE 0675 and in the DEMVT recommendations.

MODULARIS Vario "Litho Configuration" (Partial Illustration)

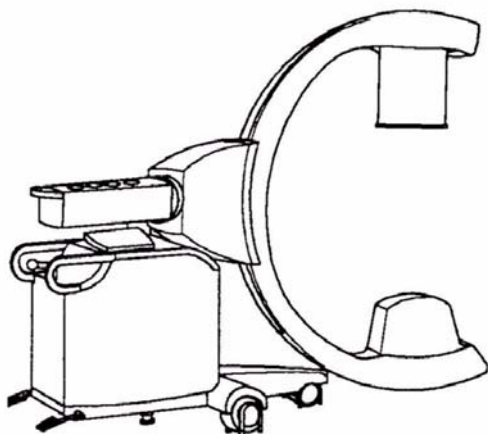


MODULARIS Vario "UltraLith Configuration"

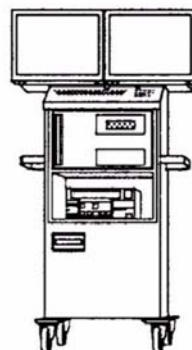
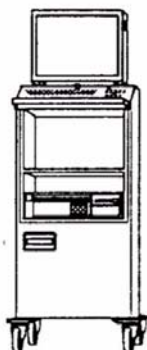


MODULARIS Vario Component Illustration

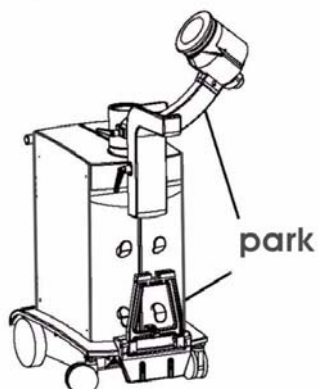
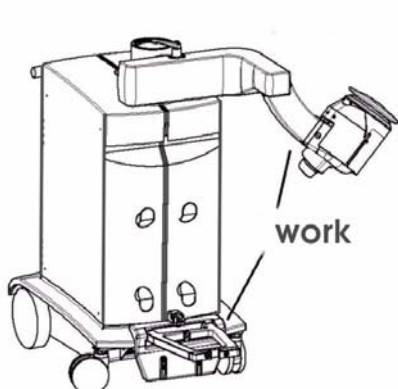
SIREMOBIL / ARCADIS



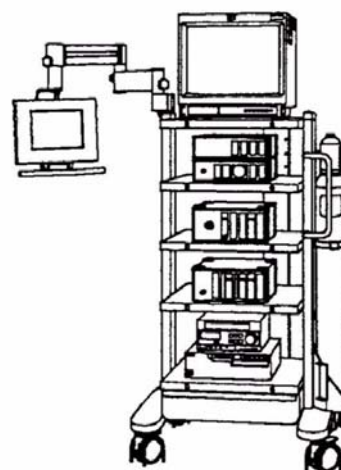
Monitor carriage



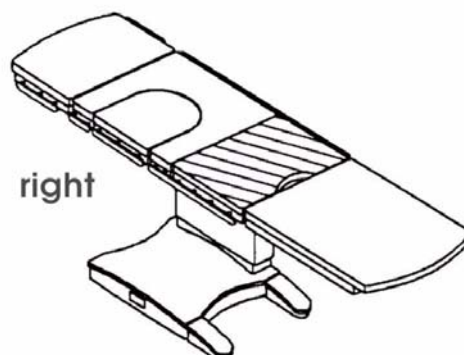
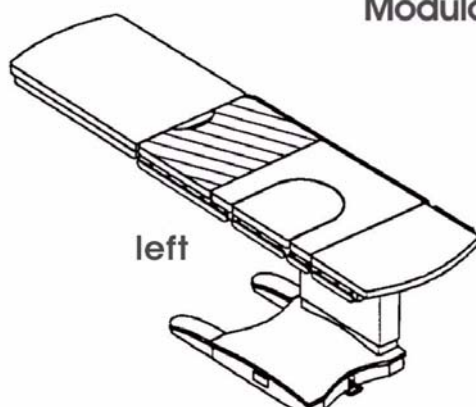
Modularis Vario



MUT



Modularis Uro



Possible Combinations:

	MODULARIS Vario Uro Plus Configuration			
	Litho	UltraLith	Endo	Complete
MODULARIS	X	X	X	X
♦ ARCADIS Varic/Orbic	X	X	X	X
*1 SIREMOBIL Compact or Compact L	X	X	X	X
MODULARIS Vario	X	X	n.a.	X
SONOLINE G20	X	X	X	X
MUT MODULARIS	n.a.	n.a.	X	X
KION	X	X	X	X

*1 = MODULARIS Vario is designed for various C-Arm units from other manufacturers.

C-Arms for VARIO	OEM	Released	In Preparation	Individual Release
ARCADIS Varic	Siemens	X		
♦ ARCADIS Orbic	Siemens	X		
SIREMOBIL Compact	Siemens	X		
SIREMOBIL Compact L	Siemens	X		
SIREMOBIL Iso-C	Siemens	X		
SIREMOBIL Iso-C 3D	Siemens	X		
Type of C-Arm to be tested	Unknown			X

OEM = Original Equipment Manufacturer

Combination with C-Arm Units Not Listed

The prerequisites must be checked according to Chapter 3 and documented in the Value Protocol.

The protocol must be available for installation and must be released by the SP Business Unit.

NOTE

For operation of the MODULARIS Litho Vario with C-Arm units that are not listed here, an individual release is always required. Discussion with the factory (SP Business Unit) is required for planning this type of operation.

Direct requests to FAX: +49 (9131) 84-5400

Pease send the Value Protocol in this document along with your request.

Transmobile MODULARIS Vario Uro Plus in the "Litho Configuration"

Transmobile means: The user moves the equipment with a vehicle to a hospital. The equipment is assembled there for temporary use. Then the equipment is prepared again by the user for transport and driven to another location. The procedure is repeated again there.

If the equipment in the MODULARIS platform is transported, the Operating Instructions SPL1-130.622.06 ... (Preparing the Vehicle) and SPL1-130.622.05 ... (Preparing for Transport) must be observed.

For this type of application, there is a separate Planning Guide as a recommendation for the user: SPL1-130.891.02...

Litho Share

Litho Share means: One MODULARIS Litho Vario can be docked to different C-Arm units. The user has several C-Arm units, each with a mechanical docking station for the MODULARIS Litho Vario. The number of docking stations and their initial adjustment must be noted for planning.

Non-Siemens C-Arm Unit for Combination with MODULARIS Vario

Information about combinations already implemented can be found on the Intranet under:
<https://sp.med.siemens.de/en/urology/products/modularisuroplus/salessupport>

NOTE

An individual release is required for each combination of C-Arm unit with the MODULARIS Vario. This release applies only for the two planned units and is defined by the Serial Numbers.

An individual release is always required for each additional combination.

Procedure with a unit already present at the customer's location:

- Determine the basic data for the desired C-Arm unit.
- Determine the prerequisites:
 - With a largely positive evaluation, perform the value determination 100%
 - Points with a negative evaluation, value determination is not necessary. If there is information from the manufacturer for a positive modification, add this as a remark.
For example: If the CE label is not present, this can be done subsequently by the manufacturer.
- Value determination for possible implementation
 - C-Arm - Vario mechanical coupling (docking unit)
 - ISO-center = focus point in X,Y and Z axes
- Value determination when there are design differences.

Procedure without access to the C-Arm unit:

- Send the basic data for the desired C-Arm unit to the factory (SP Business Unit). The ability to install, for a decision to proceed with an order will be performed by the factory.

Decision to proceed with the order:

- If all values are in the positive range, the installation release by the factory must be obtained (SP Business Unit).
- For values that are outside of the requirements, but for which corrective measures are possible, an evaluation will be performed at the factory (SP Business Unit).
- All values marked outside of the requirements will cause the request to be denied.

"Best Practice - Knowledge Sharing"

If a particular desired C-Arm unit is negatively evaluated during the planning phase, please always send the basic data to the factory (SP Business Unit). It will be used to update the list of released units on the Intranet and will help save redundant costs on a worldwide basis.

Manufacturer
Type / Order Designation
Serial No.

C-Arm Data, Value Table

Manufacturer	
Type / Order Designation	
Serial No.	

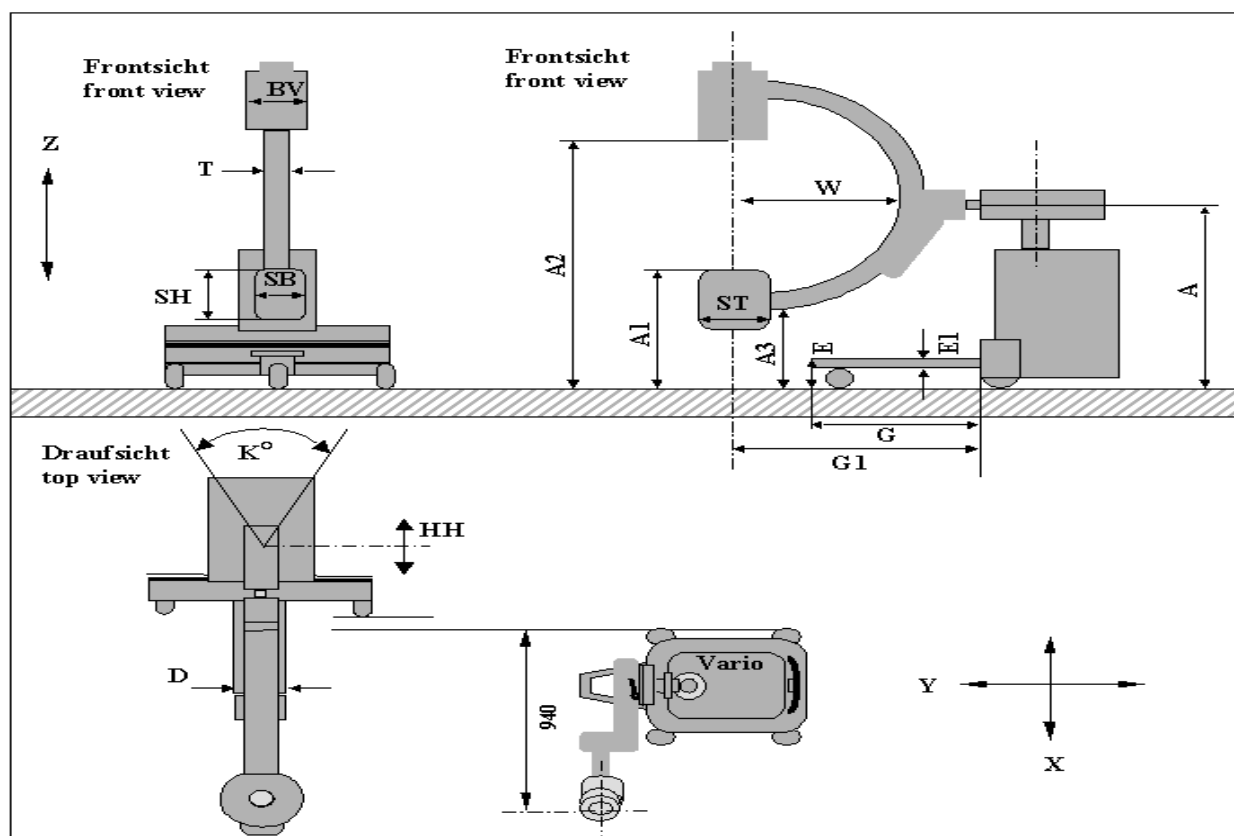
Prerequisites	Yes	No	Remark
CE Label			
Combination with Vario known			
ISO-centric operation			
Image system with LIH function			
Horizontal pivoting and lift with latching device			
Vertical lift with latching device at 1070 (± 20) above the floor			
Angulation of 0° to min. ± 20° with latching device			
Left side of C-Arm free of cables and attachments			

To determine the values, secure the C-Arm vertically in the ISO-center 1070 mm (± 20) above the floor. Angulation and Orbital = 0°.

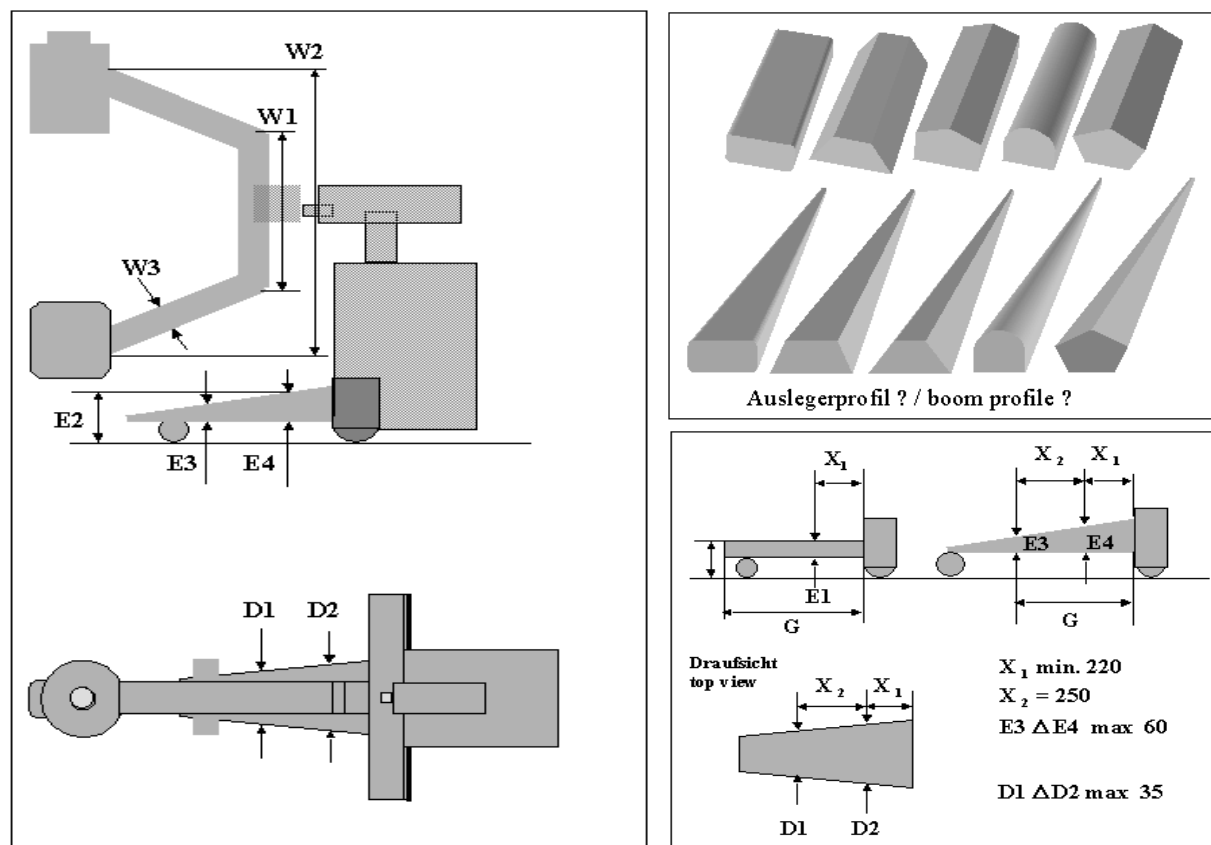
Value	Min	Max	Actual	Value	Min	Max	Actual
A	1070 (± 20)			G	500		
A1	n.a.	760		G 1	1035 (± 20)		
A2	1460	n.a.		HH	150	n.a.	
A3	n.a.	550		K (°)	± 15×	n.a.	
BV	7" (17 cm)	9" (23 cm)		SB	120	n.a.	
D	155	185		SH	n.a.	n.a.	
E	135	205		ST	130	n.a.	
E 1	35	n.a.		W	640	n.a.	

Value	Min	Max	Actual	Value	Min	Max	Actual
E2	135	205		D2	155	185	
E3	35	n.a.		W1		n.a.	
E4	35	Δ E3 max 30		W2		n.a.	
D1	155	185		W3		n.a.	

Sketch 1 - Designs similar to the Siremobil Compact / ARCADIS Orbic



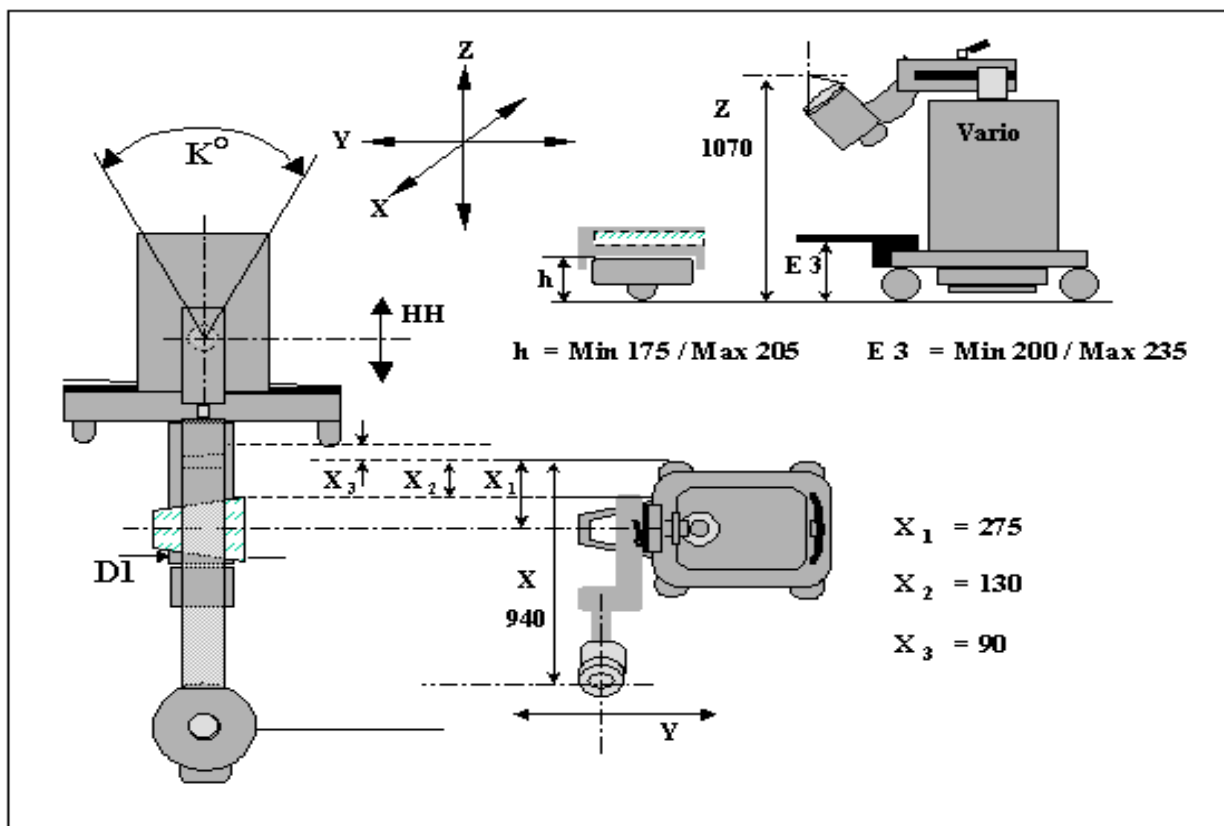
Sketch 2 - Design differences



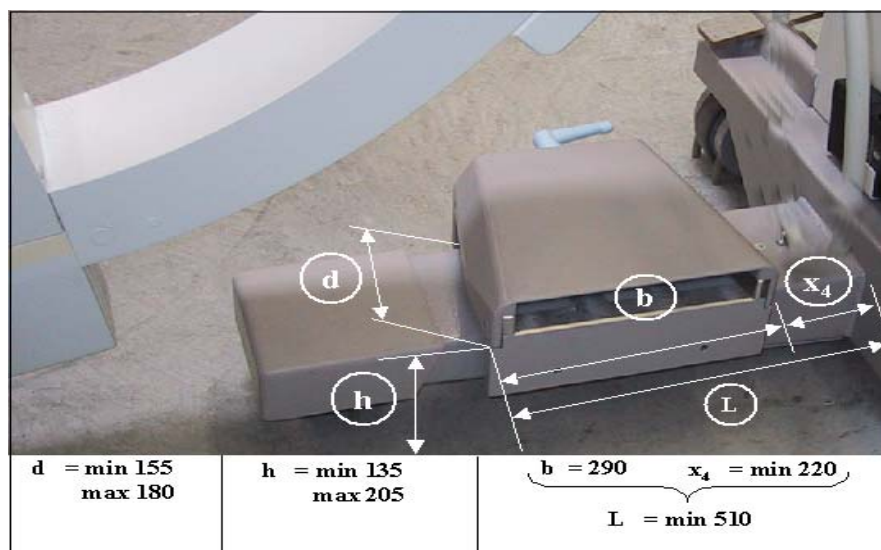
Details of the Docking Unit

The most common differences are indicated in value sketch 2.

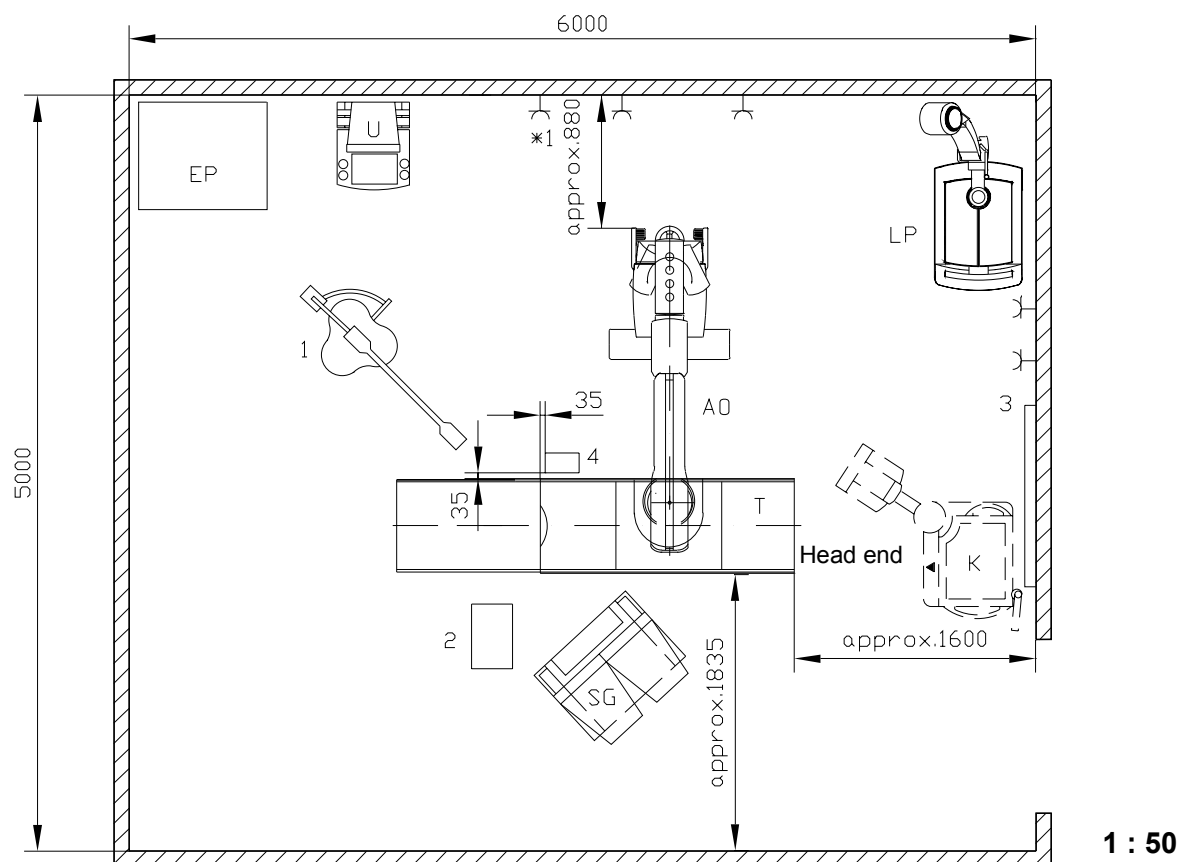
Sketch 3 - Docking shell and terminal



Sketch 4 - Docking shell for C-Arm unit



MODULARIS Uro Plus, "Complete Configuration" Recommended Room Plan



NOTE

The floor in the room must be even in the area of the A0 and T.

MODULARIS Vario - Uro Plus "Complete Configuration"

AO = ARCADIS Varic/Orbic or SIREMOBIL Compact, SG = monitor cart, T = MODULARIS Uro (patient table), LP = MODULARIS Vario, U = SONOLINE G20 (option)
Patient monitor (option), storage space on MODULARIS Vario

Can be ordered from SIEMENS

K = KION anaesthesia unit, 1 = OP lamp
4 = Stationary water installation (at customer's request)

Customer

Electrical outlets (*1 ARCADIS / SIREMOBIL electrical outlet),
2 = Height-adjustable container for rinse options
If anaesthesia unit: 3 = power supply rail (gas connection, observe country-specific connections)

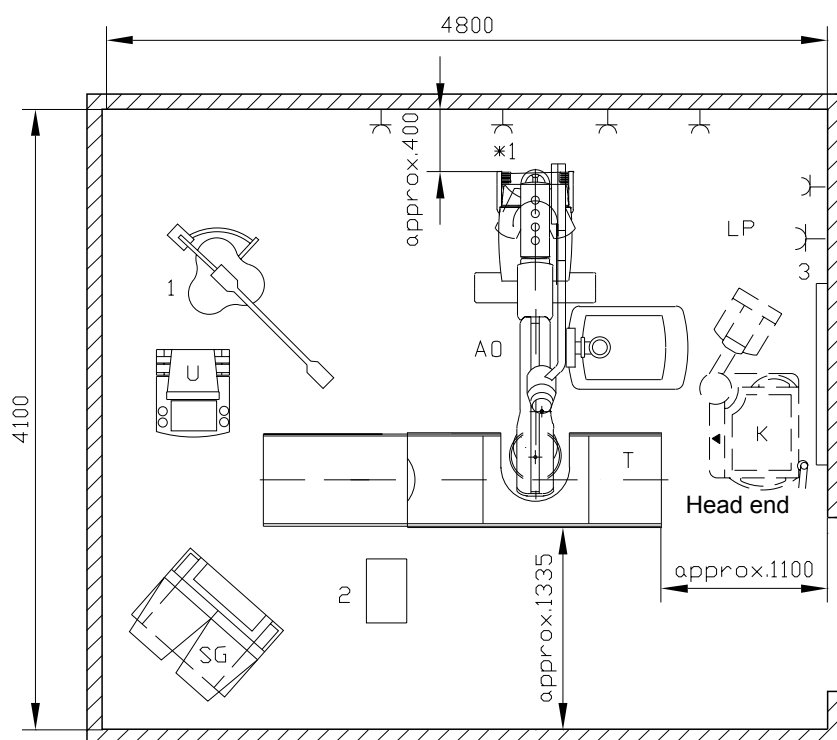
From the RICHARD WOLF Company

EP = MUT MODULARIS (MUT = MOBIL UNIT TOWER)
without support arm (with support arm, see page 3-12)

Room Size

	Area	Length	Width	Height
Min. technically possible examination room size	30 m ²	6.0 m	5.0 m	min. 2.4 m

MODULARIS Vario "Litho Configuration" Recommended Room Plan



1 : 50

NOTE

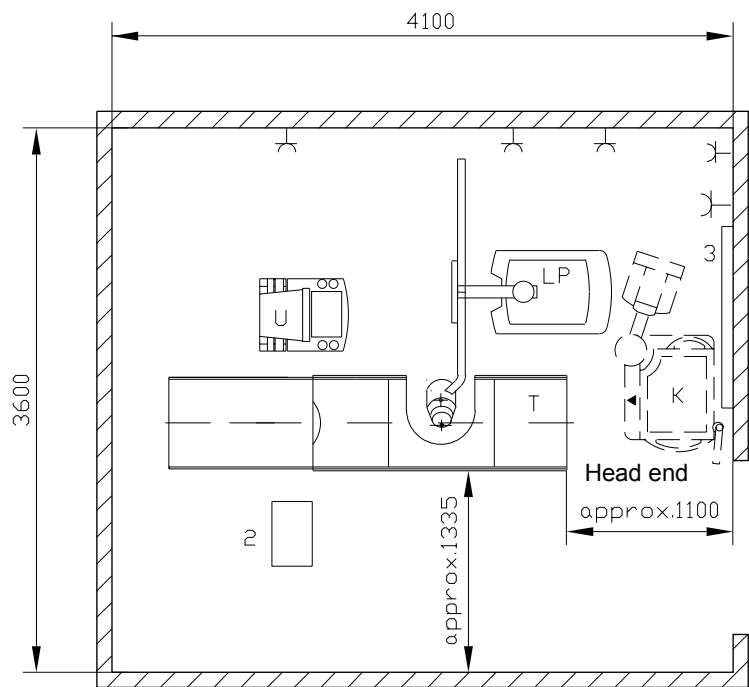
The floor in the room must be even in the area of the AO and T.

MODULARIS "Litho Configuration"	AO = ARCADIS OR SIREMOBIL, SG = monitor cart, T = MODULARIS Uro (patient table), LP = MODULARIS Vario, U = SONOLINE G20 (option) Patient monitor for ECG triggering (option), storage space on MODULARIS Vario
Can be ordered from SIEMENS	K = KION anaesthesia unit, 1 = OP lamp
Customer	Electrical outlets (*1 ARCADIS / SIREMOBIL electrical outlet), 2 = height-adjustable container for rinsing options With anaesthesia unit: 3 = power supply rail (gas connection, observe country-specific connections)

Room Size

	Area	Length	Width	Height
Min. technically possible examination room size	20 m ²	4.8 m	4.1 m	min. 2.4 m

MODULARIS Vario "UltraLith Configuration" Recommended Room Plan



1 : 50

NOTE	The floor in the room must be even in the area of the T.
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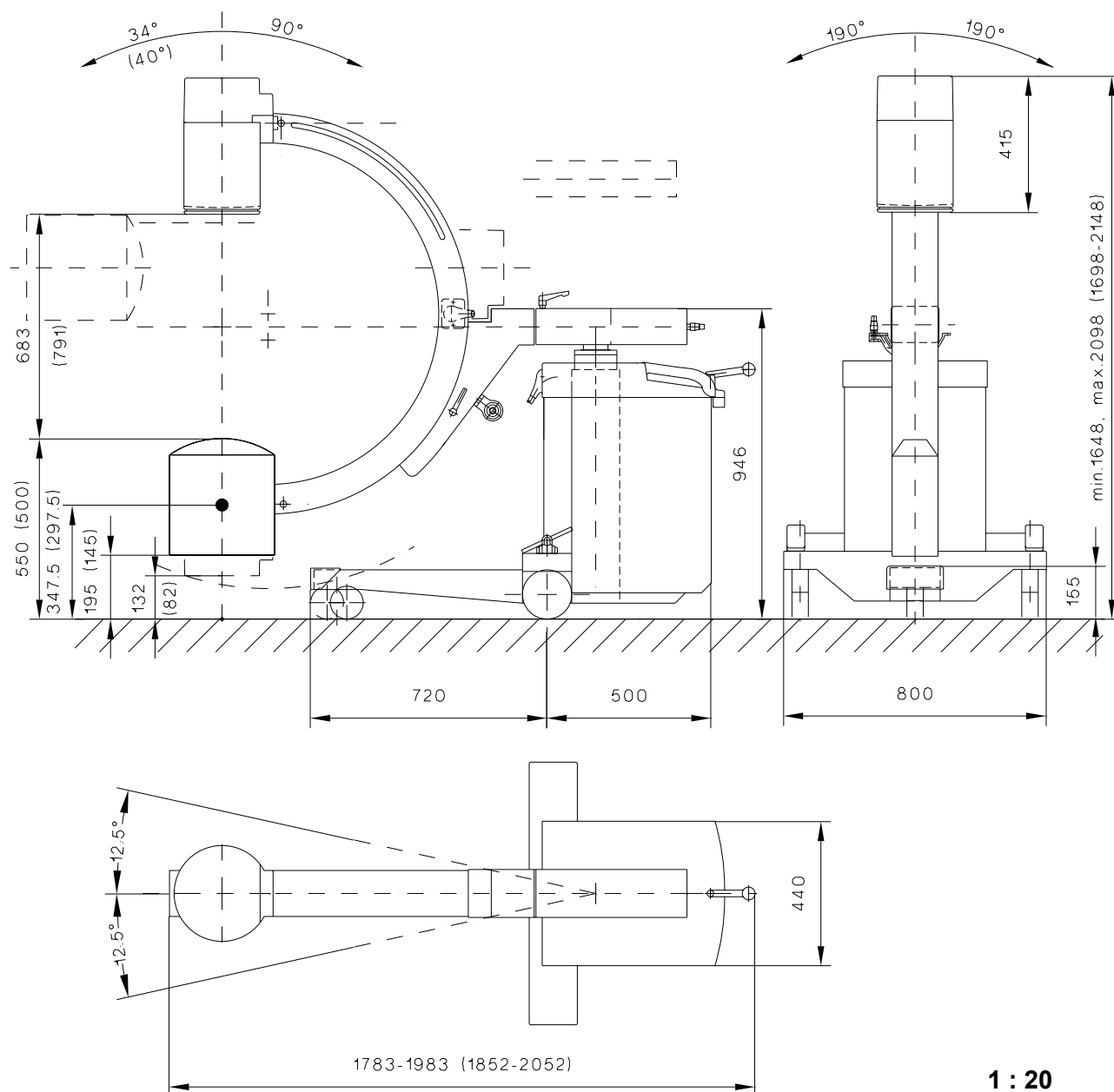
◆ NOTE	Room planning recommendation is optional with ARCADIS Varic/Orbic, see page 3-2
---------------	---

MODULARIS Vario "UltraLith Configuration"	T = MODULARIS Uro (patient table), LP = MODULARIS Vario, U = SONOLINE G20 Patient monitor for ECG triggering (option), storage space on MODULARIS Vario
Can be ordered from SIEMENS	K = KION anaesthesia unit
Customer	2 = height-adjustable container for rinse options With anaesthesia unit: 3 = power supply rail (gas connection, observe country-specific connections)

Room Size

	Area	Length	Width	Height
Min. technically possible examination room size	14.8 m ²	4.1 m	3.6 m	min. 2.4 m

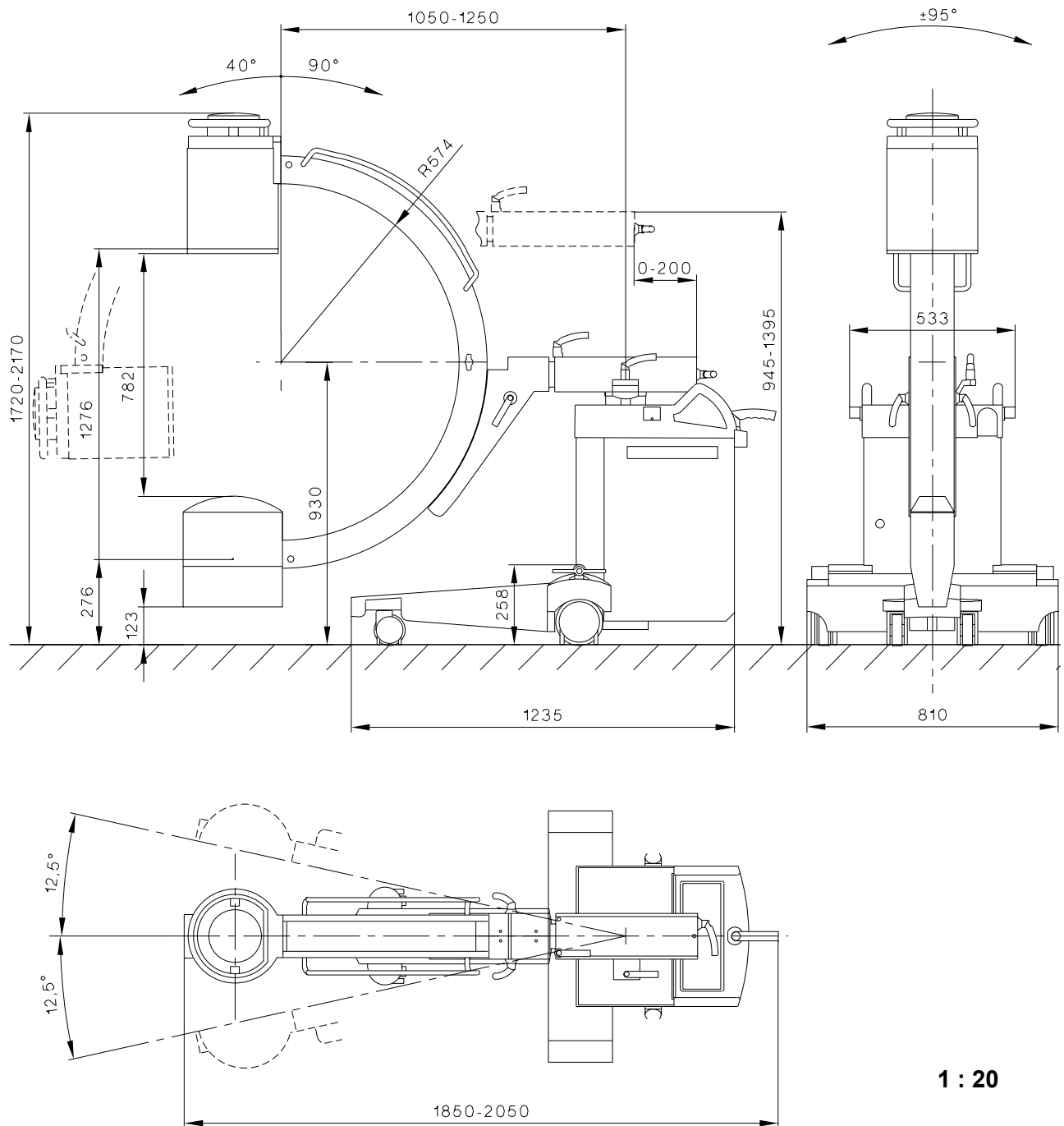
SIREMOBIL Compact / L Dimensions



1 : 20

	Maximum function	Lithotripsy
Horizontal lift:	200 mm	Isocenter adjusted to focus
Vertical lift:	450 mm	Isocenter = 1070 mm (± 10) adjusted starting from floor
Angulation:	± 190°	± 15°
Orbital rotation:	90° / - 34°	0° adjusted
Horizontal pivot:	± 12.5°	Isocenter adjusted to focus

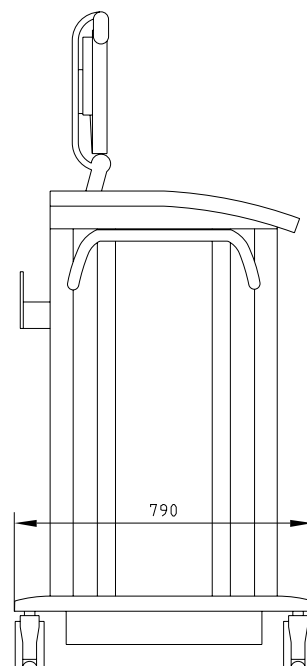
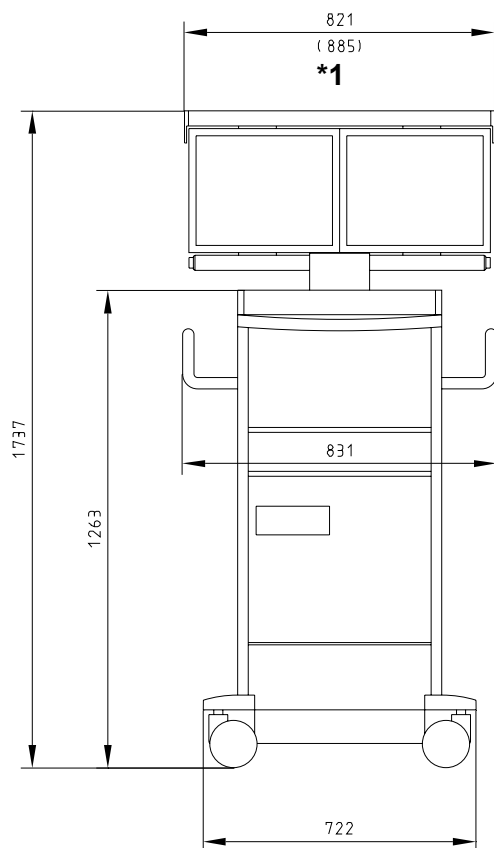
ARCADIS Varic



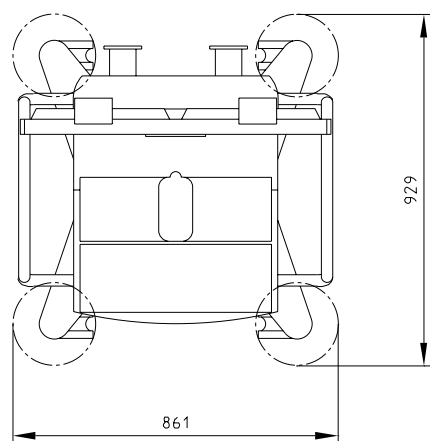
1 : 20

Horizontal travel: 200 mm
 Vertical travel: 450 mm
 Angulation: $190^\circ (\pm 95^\circ)$
 Orbital pivot range: $+ 40^\circ / -90^\circ$
 Horizontal pivot range: $\pm 12.5^\circ$

◆ Monitor Trolley Dimensions, ARCADIS

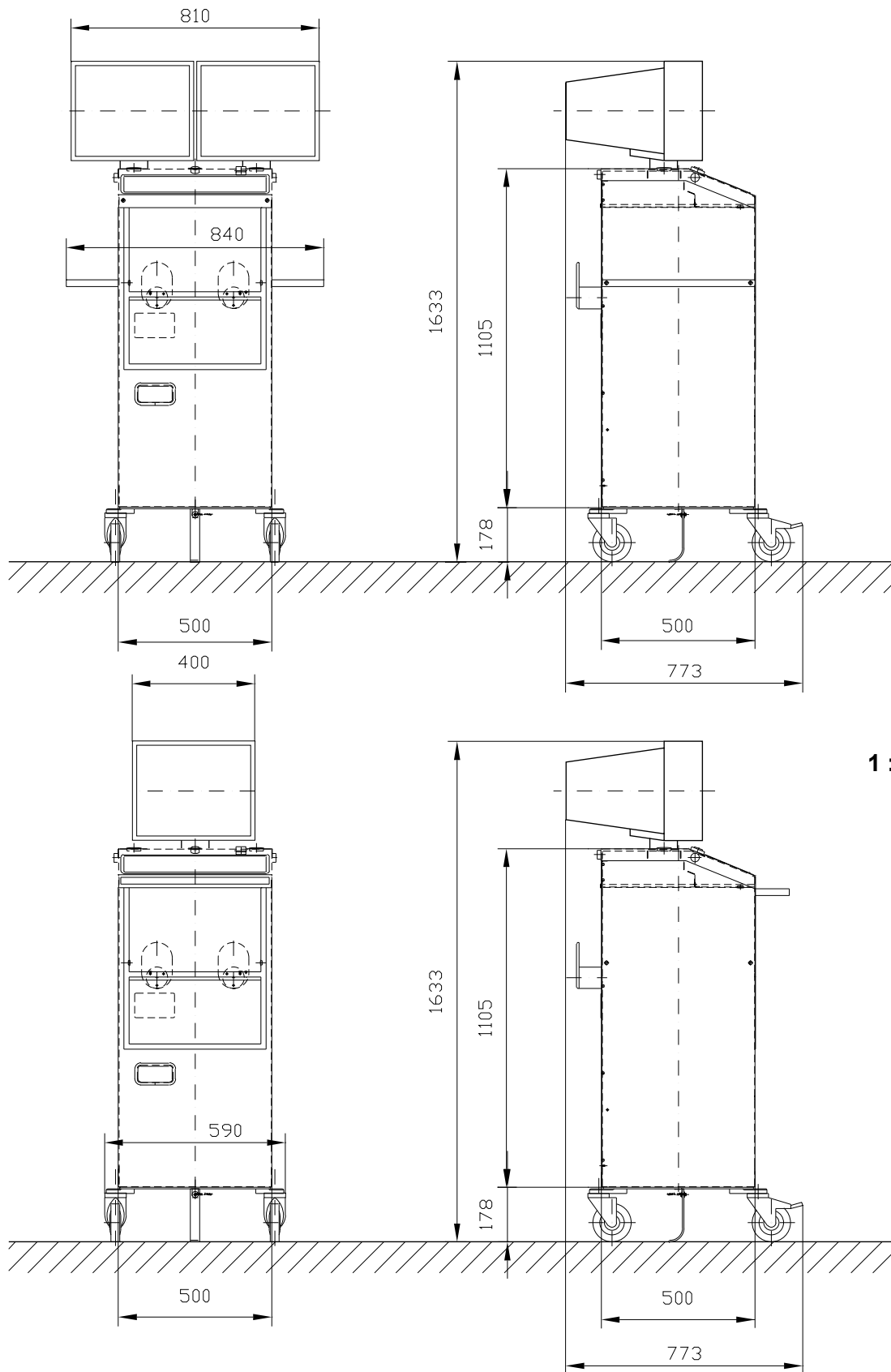


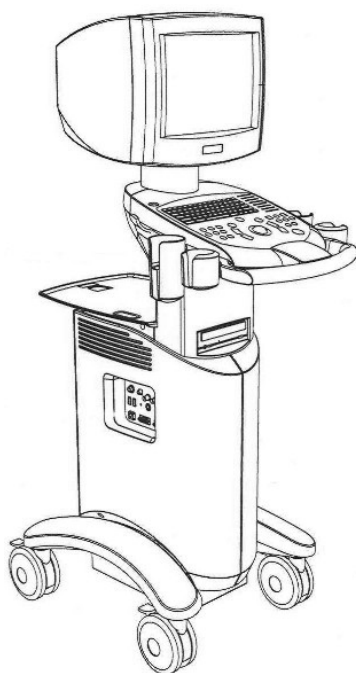
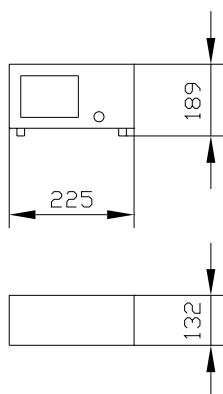
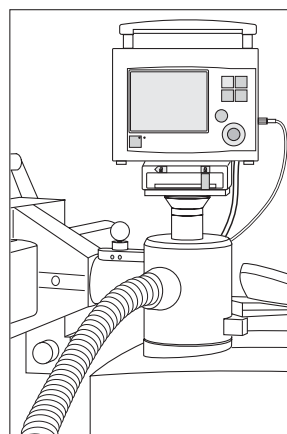
*1 Option black/white display



1 : 20

♦ Monitor Cart Dimensions, SIREMOBIL

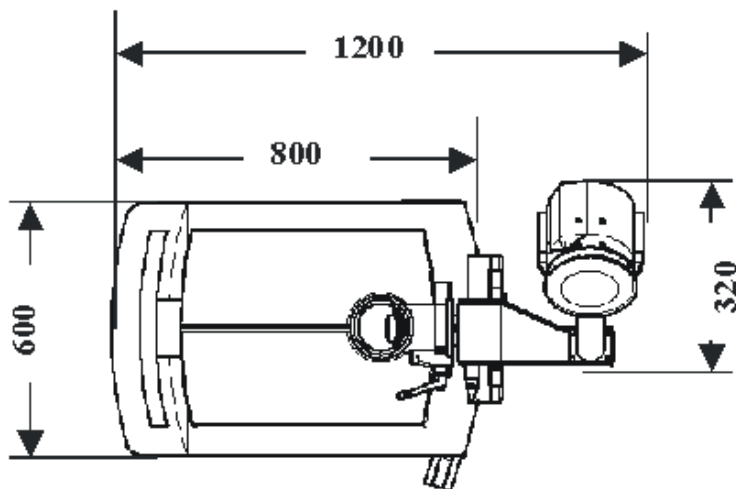
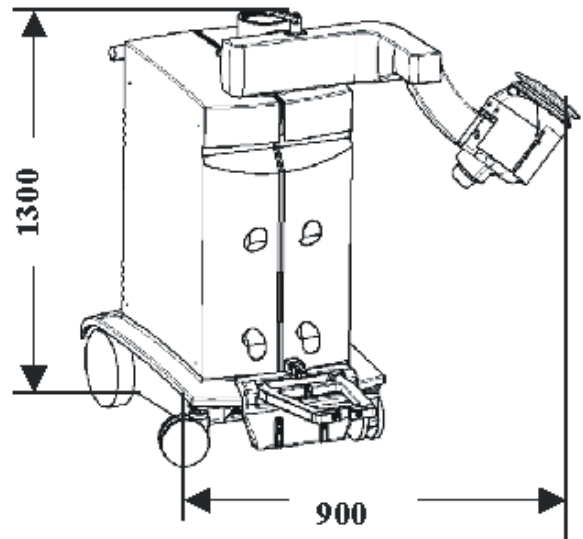
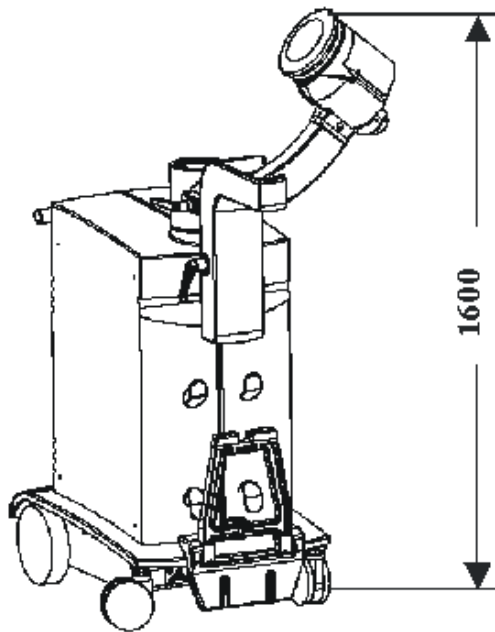


SONOLINE G20 with Monitor**Patient Monitor Dimensions****Patient monitor on the MODULARIS Vario**

The patient monitor is placed on the MODULARIS Vario (Mount, Part No. 55 31 343), see patient monitor on the MODULARIS Vario drawing.

The required cables from the LITHOSTAR to the patient monitor are included in the MODULARIS Vario shipment.

MODULARIS Vario Dimensions

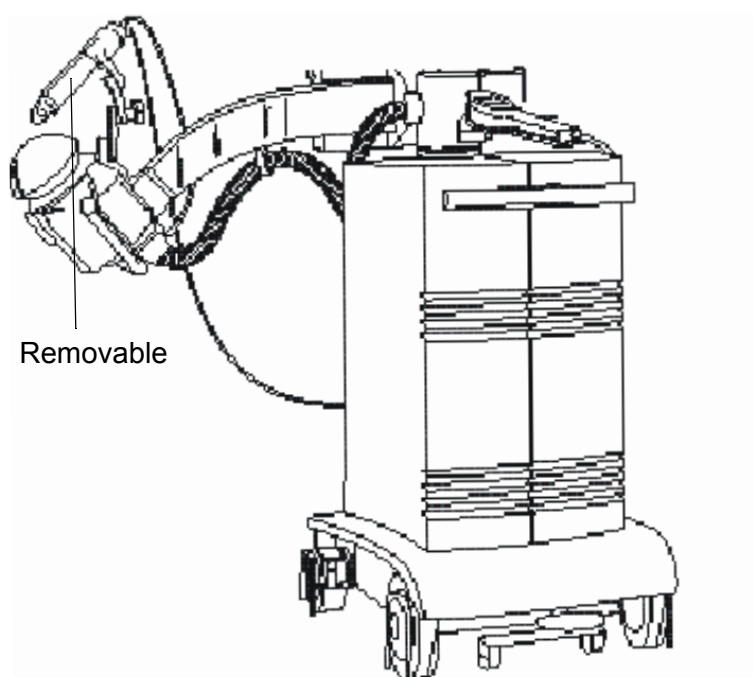


NOTE

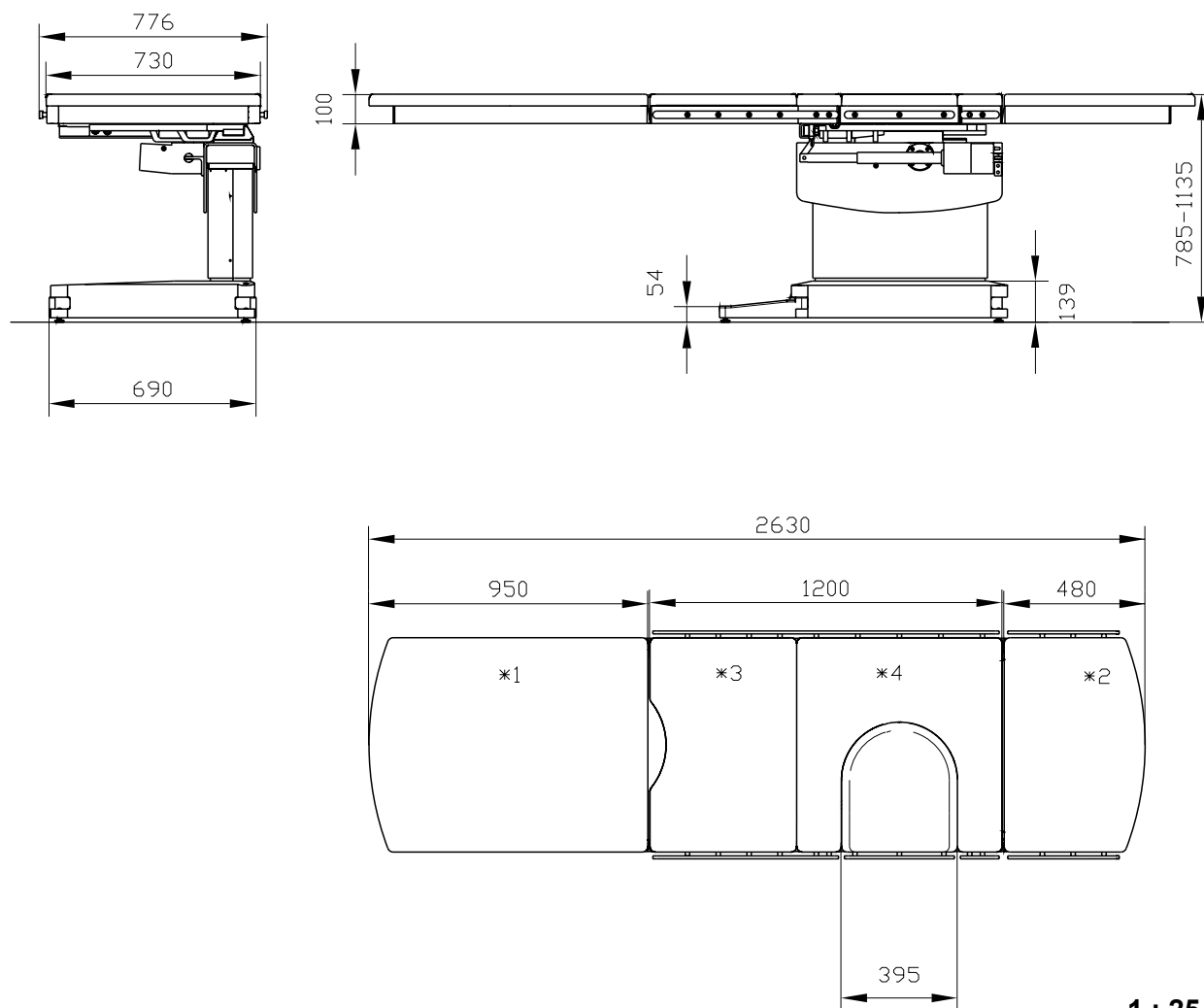
The drawings on this page are not to scale!

MODULARIS Vario

with Ultrasound Localization



MODULARIS Uro Dimensions



1 : 25

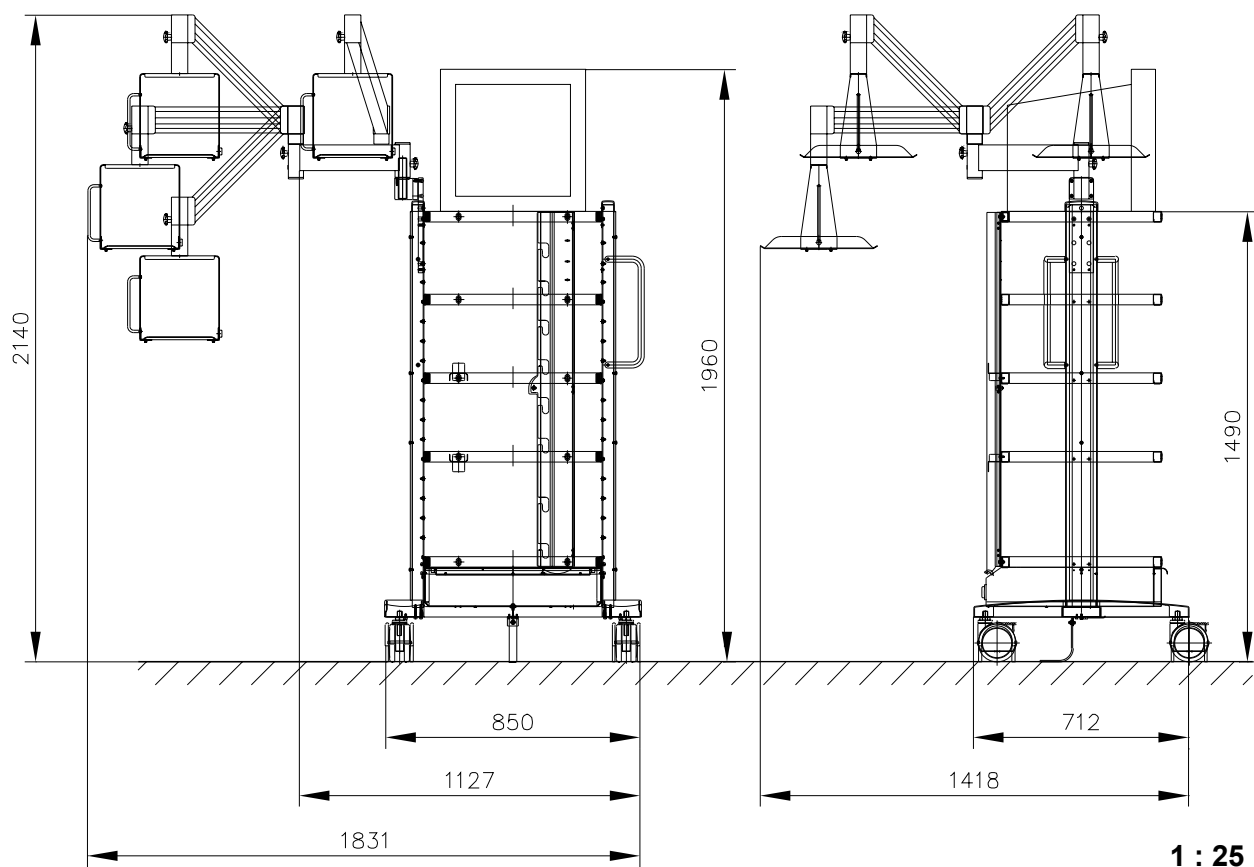
- *1 Table extension, foot end
- *2 Tale extension, head end
- *3 Radio-transparent tabletop
- *4 Middle section

Can be installed on the left or right, depending on the application

Can be installed on the left or right, depending on the application

It can also be installed to the right of the middle section *4 (Update Kit, 56 66 651 J 1048). This part should not be pointing in the direction of the input door (eye protection).

MUT MODULARIS

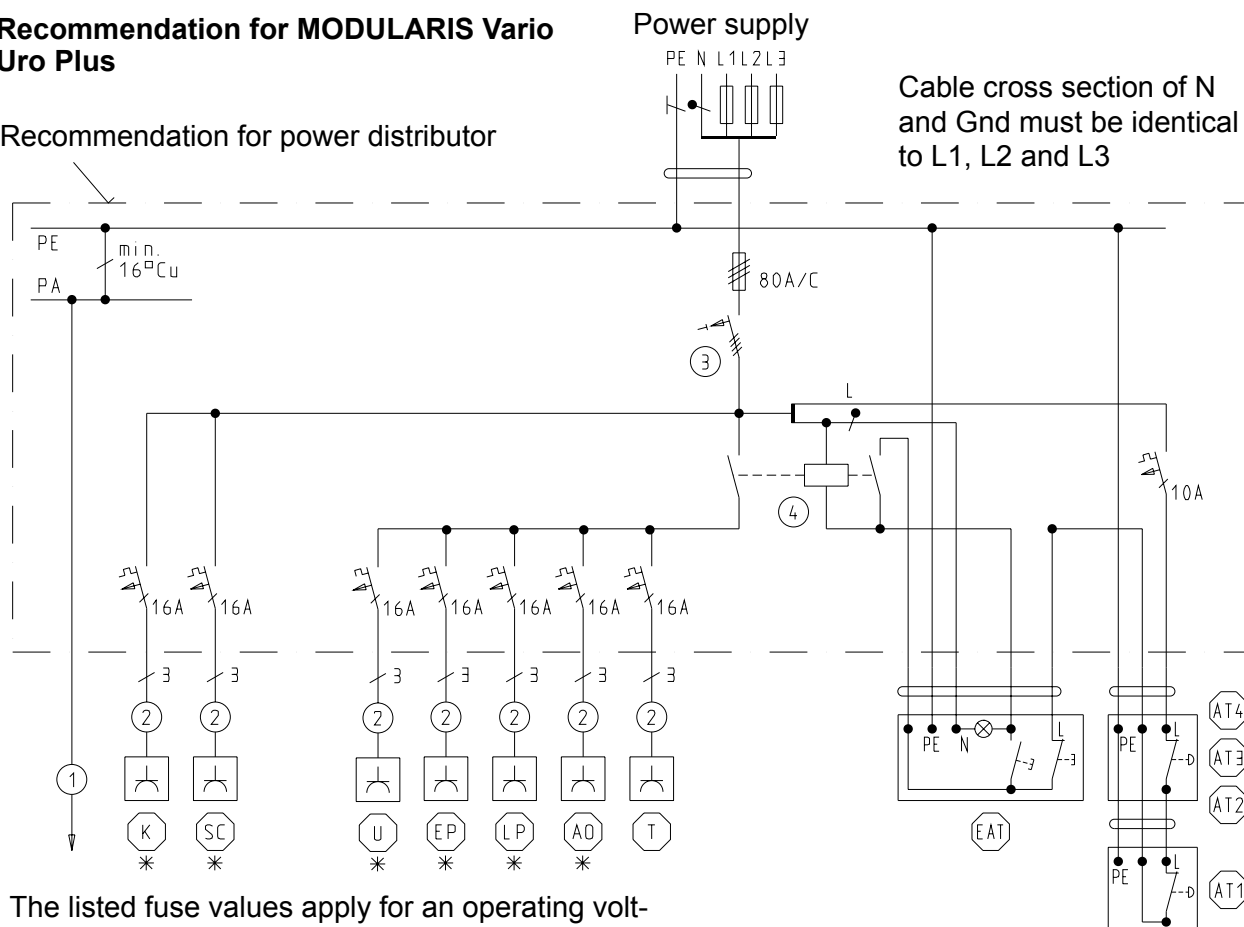


Recommendation for On-site Electrical Installation (Application Group 1)

Power Distributor per DIN VDE 0100-710: 1994-10 Application Group 1 or National Regulations

Recommendation for MODULARIS Vario Uro Plus

Recommendation for power distributor



The listed fuse values apply for an operating voltage of 230 V 1 ~ / 400 V 3 ~

With different operating voltages, the fuse values must be changed to conform to national regulations.

- ① To external conductive parts
- ② Fixed and movable power sources, e.g. outlets
- ③ GFI switch, 63 A/I Δ_N 30 mA, $U_N = 400/415$ V ~ for AC and pulsed fault currents (recommendation: Siemens FI 5SZ3 466 0KG05 All current-sensitive or ABB No. F 804 - 63 /0.03. Order from ABB Stotz - contact Heidelberg Tel. 06221 701-00). For other power line voltages, an appropriate GFI switch must be obtained locally.
- ④ System breaker

* Install per the system configuration

- AT Emergency off switch with latching mechanism
- EAT On/Off switch with pilot lamp
- EP MUT MODULARIS
- K KION anaesthesia unit
- LP MODULARIS Vario
- SC Patient monitor
- AO C-Arm unit (CEE power outlet, 16 A)
- T MODULARIS Uro
- U SONOLINE G20

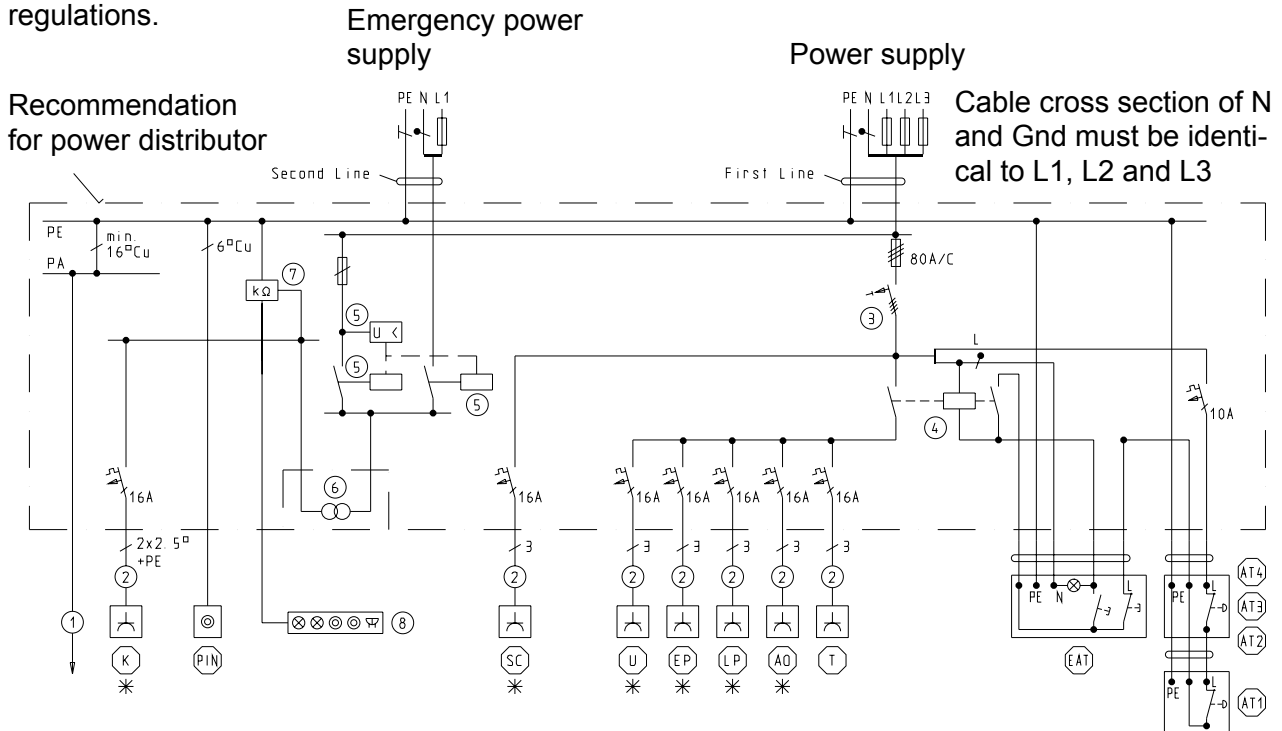
Recommendation for On-site Electrical Installation (Application Group 2)

Power Distributor per DIN VDE 0100-710: 1994-10 Application Group 2 or National Regulations

Recommendation for MODULARIS Vario Uro Plus

The listed fuse values apply for an operating voltage of 230 V 1 ~ / 400 V 3 ~

If there are different operating voltages, the fuse values must be changed to conform to national regulations.



- ① To external conductive parts
- ② Fixed and movable power sources, e.g. outlets
- ③ GFI switch, 63 A/I_{ΔN} 30 mA, U_N = 400/415 V ~ for AC and pulsed DC fault currents (recommendation: Siemens FI 5SZ3 466 0KG05 All current-sensitive or ABB No. F 804 - 63 /0.03. Order from ABB Stotz - contact Heidelberg Tel. 06221 701-00).
For other power line voltages, an appropriate GFI switch must be obtained locally.
- ④ System breaker
- ⑤ Voltage monitoring and switch-over device per DIN VDE 0107
- ⑥ Isolation transformer with overload monitoring
- ⑦ Isolation monitoring
- ⑧ Message combination

- AT Emergency off switch with latching mechanism
- EAT On/off switch with pilot lamp
- EP MUT MODULARIS
- K KION anaesthesia unit
- LP MODULARIS Vario
- PIN Gnd pin outlet
- SC Patient monitor
- AO C-Arm unit (CEE power outlet, 16 A)
- T MODULARIS Uro
- U SONOLINE G20

* Install per the system configuration

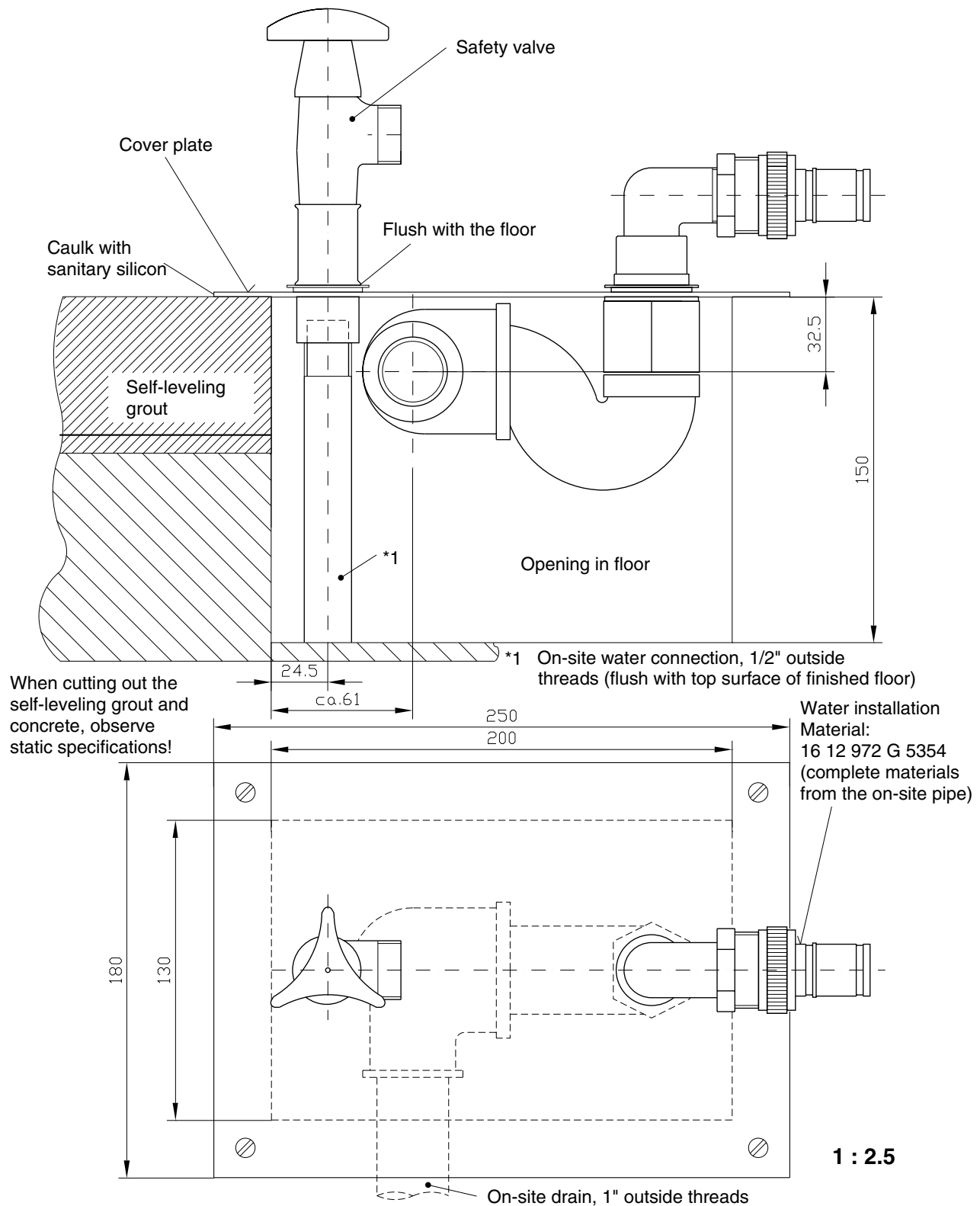
Floor Properties

All modules, except for the patient monitor, are transportable.

NOTE

The floor should be provided with a floor covering that permits easy movement of the units and that has a hard surface.
--

Stationary Water Installation (Recommendation)

**NOTE**

Penetration of foreign materials into the tap water supply must be ruled out. Observe legal regulations in the particular country, as well as any local statutes.

Cable Connections

Module	Power Cable Length	Connector
• MODULARIS Vario	approx. 6 m	115/230 V: connector type, adapted to CEE 7/VII 3-prong connector
• MODULARIS Uro (patient table)	approx. 6 m	115/230 V: connector type, adapted to CEE 7/VII 3-prong connector
• SONOLINE G20	approx. 3.5 m	115 V: Type SJT with hospital grade 3-prong connector 230 V: type adapted to CEE 7/VII 3-prong connector
• Monitor cart (SIREMOBIL)	approx. 6 m	115 V: hospital-grade, 15 A 230 V: CEE ME 320 P6 (16 A)
• To monitor cart	approx. 6 m	No power connector
• SIREMOBIL		
• KION anaesthesia unit	approx. 6 m	115 V: Type SJT with hospital grade 3-prong connector 230 V: type adapted to CEE 7/VII 3-prong connector
• Patient monitor ECG unit	approx. 3 m	115 V: Type SJT hospital grade 3-prong connector 230 V: type adapted to CEE 7/VII 3-prong connector
• MUT MODULARIS	approx. 5 m	115 V: Type SJT hospital grade 3-prong connector 230 V: type adapted to CEE 7/VII 3-prong connector

NOTE

Because there are country-specific power line connectors, they must be changed for individual modules.

Power connectors must be obtained locally according to the national standard.

For USA and Canada, use the "Hospital Grade Connector".

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Electrical Data

	Power Connection	Fusing, internal	Internal Line Resistance	Power Consumption
* ARCADIS / SIREMOBIL	100/110/120/127/200/ 230/240 V, $\pm 10\%$ 50/60, ± 1 Hz	15 A slow-blow beginning at 200 V 20 A slow-blow up to 127 V	≤ 0.3 Ohm (100/120/127 V) ≤ 0.8 Ohm (200/230/240 V)	Short-term: max. 2.90 KVA Long-term: max. 1.65 KVA
MODULARIS Uro (patient table)	100 - 230 V, $\pm 10\%$ 50/60, ± 1 Hz	10 A	n.a.	max. 0.4 KVA
MODULARIS Vario	100/120/200/230, $\pm 10\%$ 50/60, ± 1 Hz	16 A	n.a.	max. 1.5 KVA
SONOLINE G20	100/115/230 V, $\pm 10\%$ 50/60, ± 1 Hz	3 A	n.a.	max. 0.350 KVA
KION anaesthesia unit	100 - 240 V, $\pm 10\%$ 50/60, ± 1 Hz	6,3 A	n.a.	max. 0.5 KVA
MUT MODULARIS (RICHARD WOLF Co.)	100 - 127/230 V, $\pm 10\%$ 50/60, ± 1 Hz	9 A slow-blow up to 127 V 16 A slow-blow beginning at 200 V	n.a.	max. 2.0 KVA

Weights and Heat Dissipation

	Weight (kg)	Heat Dissipation (W)
* ARCADIS / SIREMOBIL	approx. 350	approx. 500
Monitor cart	approx. 195 max. configuration	approx. 600
MODULARIS Uro (patient table)	approx. 280	approx. 100
MODULARIS Vario	approx. 200	approx. 700
SONOLINE G20	approx. 60	approx. 450
KION anaesthesia unit	approx. 180	approx. 400
MUT MODULARIS (RICHARD WOLF Co.)	approx. 210 max. configuration	approx. 500; with max. configuration 1000

* For other C-Arm units, use the applicable data sheet.

Environmental Conditions

		Operation	Transport/Storage
SIREMOBIL / ARCADIS monitor cart	Adm. ambient temperature	+ 10° C ... + 37° C	- 20° C ... + 37° C
	Adm. rel. humidity	30% ... 75%	30% ... 75%
	Air pressure	700 hPa - 1060 hPa	700 hPa - 1060 hPa
MODULARIS Vario	Adm. ambient temperature	+ 10° C ... + 40° C	- 20° C ... + 60° C
	Adm. rel. humidity	30% ... 75%	30% ... 75%
	Air pressure	700 hPa - 1060 hPa	700 hPa - 1060 hPa
MODULARIS Uro	Adm. ambient temperature	+ 10° C ... + 40° C	- 40° C ... + 70° C
	Adm. rel. humidity	30% ... 75%	10% ... 100%
	Air pressure	700 hPa - 1060 hPa	500 hPa - 1060 hPa
SONOLINE G20	Adm. ambient temperature	+ 10° C ... + 40° C	- 20° C ... + 60° C
	Adm. rel. humidity	20% ... 85%	20% ... 85%
	Air pressure	700 hPa - 1060 hPa	700 hPa - 1060 hPa
KION anaesthesia unit	Adm. ambient temperature	+ 15° C ... + 35° C	- 10° C ... + 60° C
	Adm. rel. humidity	30% ... 75%	30% ... 75%
	Air pressure	700 hPa - 1060 hPa	700 hPa - 1060 hPa
MUT MODULARIS (RICHARD WOLF Co.)	Adm. ambient temperature	+ 10° C ... + 40° C	- 20° C ... + 60° C
	Adm. rel. humidity	30% ... 75%	10% ... 90%
	Air pressure	700 hPa - 1060 hPa	500 hPa - 1060 hPa

* For other C-Arm units, use the applicable data sheet.

Paint Colors

Primary color	Medical White C610
Base	Medium Basic A701
Grips	Medical Blue C750

Noise Generation

Test Meter

Larson Davis:

Realtime Time Analyzer	2900
Precision Microphone	2541
Microphone Preamplifier	900B
Precision Sound Calibrator	CA 250

For the User

—	Noise generation [db (A)] 1.5 meters from the noise source at 2 Hz final frequency	
		Behind the radiation protective wall
Energy level 4	74	68
Energy level 8	90	72

	With 8 patients (3000 shock waves / patient results in a load of)
Energy level 4	76 [db (A)]
Energy level 8	85 [db (A)]

For the Patient

—	Noise generation [db (A)] 1.5 meters from the noise source at 2 Hz final frequency
Energy level 4	77
Energy level 8	82

Packaging

◆ * ARCADIS / SIREMOBIL	Packaging Size	L x W x H / mm: 2450 x 990 x 2100
	Weight with 23cm I.I.	approx. 650 kg with packaging
* Monitor cart	Packaging Size	L x W x H / mm: 1030 x 930 x 1950
	Weight	approx. 195 kg without packaging
MODULARIS Vario	Packaging Size	L x W x H / mm: 1400 x 800 x 2200
	Weight	approx. 220 kg with packaging
MODULARIS Uro (patient table)	Packaging Size	L x W x H / mm: 1480 x 940 x 1340
	Weight	approx. 300 kg with packaging
SONOLINE G20	Packaging Size	L x W x H / mm: 960 x 600 x 1450
	Weight	approx. 83 kg with packaging
KION anaesthesia unit	Packaging Size	L x W x H / mm: 750 x 590 x 1500
	Weight	approx. 210 kg with packaging
MUT MODULARIS (RICHARD WOLF Co.)	Packaging Size	L x W x H / mm: 900 x 750 x 1600
	Weight	approx. 230 kg without packaging

* For other C-Arm units, use the applicable data sheet.

Gas Supply for KION Anaesthesia Unit

Gas supply sources	O ₂ , air, N ₂ O
Gas pressure	min. 2.8 / max. 6 bar (O ₂ , air, N ₂ O)

NOTE

Observe country-specific regulations regarding gas connections.

Transport Routes

Without packaging	min. 850 mm door opening approx. 1800 mm corridor width min. 1900 mm door opening height
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Freight Elevator Requirements

Without packaging	min. 850 mm door opening min. 1900 mm door opening height min. 2160 mm internal elevator depth
Freight elevator load capacity	min. 375 kg

NOTE

MODULARIS Vario:

Transport and store with water not filled in.

Transport the LITHOSTAR without the ultrasound mount.

Transmobile Usage

For transport between the locations where it is used, the ambient conditions for the operating location apply.

MODULARIS Vario	Adm. ambient temperature	+ 10° C ... + 40° C
	Adm. rel. humidity	30% ... 75%
	Air pressure	700 hPa - 1060 hPa

These conditions also must be implemented for idle times of the vehicle without unloading it.

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Chapter	Page	Change
0 - 8		Rev. level of entire document changed from 03 to 04.
1	1-5	Text updated.
2	2-3	Text updated.
3	3-1 to 3-3	Text updated.
3	3-6 and 3-7	Pages swapped.
6	6-4	Text updated.
8	8-1	Changes to Previous Version updated.

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